CLAIMS

1. A flexible metal-clad laminate comprising a metal foil and a heat-resistant resin film layer formed on one side of the metal foil, the heat-resistant resin film layer comprising a crosslinked condensation polymer and having an N-methyl-2-pyrrolidone-insolule content of at least 1%, particularly 1 to 99%.

2. The flexible metal-clad laminate according to claim 1, wherein the heat resistant resin film layer is formed by converting an organic solvent-soluble condensation polymer by crosslinking into an organic solvent-insoluble form.

3. The flexible metal-clad laminate according to claim 1, wherein the heat-resistant resin film layer is formed by applying to the metal foil a solution prepared by dissolving an organic solvent-soluble condensation polymer in the organic solvent and subjecting the coated metal foil to a predrying step, and a heat-treatment and solvent removal step.

4. The flexible metal-clad laminate according to claim 1, wherein the heat-resistant resin film layer has an

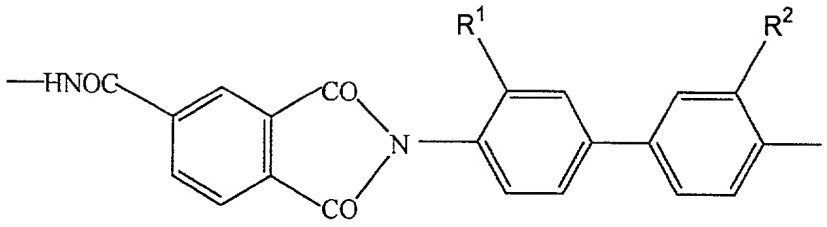
initiation tear strength (film thickness: 20 μm) of at least 15 kg and has a thermal gradient dimensional change of not more than 0.1% when heated at 200°C for 30 minutes.

5. The flexible metal-clad laminate according to claim 1, which has a solder heat resistance of at least 350°C, an adhesion between the metal foil and the heat-resistant resin film of at least 80 g/mm and a radius of curvature of at least 15 cm.

6. The flexible metal-clad laminate according to claim 1, wherein the average surface roughness of the surface of the heat-resistant resin film layer which is in contact with the metal foil is not more than 0.4 μm.

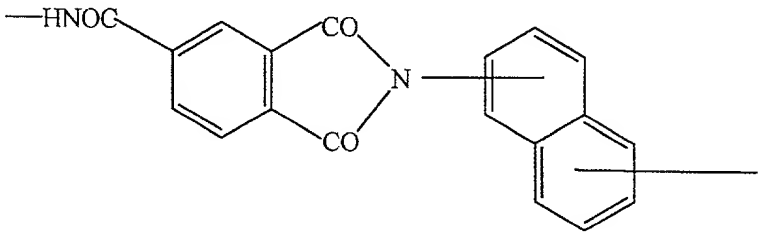
7. The flexible metal-clad laminate according to claim 1, wherein the elastic modulus retentivity of the heat-resistant resin film after being immersed in an aqueous solution of sodium hydroxide (40% by weight) at 25°C for 100 hours is at least 40%.

8. The flexible metal-clad laminate according to claim 1, wherein the condensation polymer comprises the unit represented by formula (1)



(1)

wherein R^1 and R^2 are the same or different and each represents hydrogen or an alkyl or alkoxy group having 1 to 4 carbons atoms and/or the unit represented by formula (2)



(2)

9. A method for producing the flexible metal-clad laminate as set forth in claim 1, the method comprising the steps of

(A) applying to the metal foil a solution prepared by dissolving a heat-resistant resin containing an organic solvent-soluble condensation polymer in the organic solvent, predrying the resulting coating film

until the coating has a residual solvent content of 10 to 40% by weight to obtain a predried laminate comprising the predried heat-resistant resin layer and the metal foil, and

(C) heat-treating the above predried laminate.

10. The method according to claim 9, which further comprises step (B) of winding up, in the form of a roll, the predried laminate obtained in step (A) in such a manner that its coated surface does not come into contact with its uncoated surface.

11. The method according to claim 9, wherein the predrying in step (A) is carried out at a temperature 70°C to 130°C lower than the boiling point of the solvent used for preparing the heat-resistant resin solution.

12. The method according to claim 9, wherein the heat-treating in step (C) is carried out under reduced pressure and/or in an inert gas atmosphere, while removing the solvent such that the heat-resistant resin layer has an insoluble content of 1% to 99%.

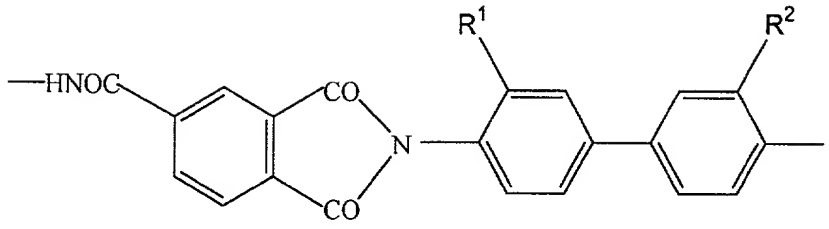
13. The method according to claim 9, wherein in step (C), the predried laminate is dried under reduced pressure

at 200 to 400°C to reduce the residual solvent content to 5% by weight or lower and then heating the laminate in an inert gas at 200 to 400°C for 1 to 30 hours.

14. The method according to claim 10, wherein step (A) comprises applying the heat-resistant resin solution to the metal foil to leave the lengthwise borders on either edge uncoated, predrying the applied resin solution to obtain a predried laminate comprising the predried heat-resistant resin layer and the metal foil and step (B) comprises placing a tape made of a material different from that of the laminate on the uncoated portions of the predried laminate or covering both lengthwise edges of the predried laminate with the tape, when winding up the metal foil.

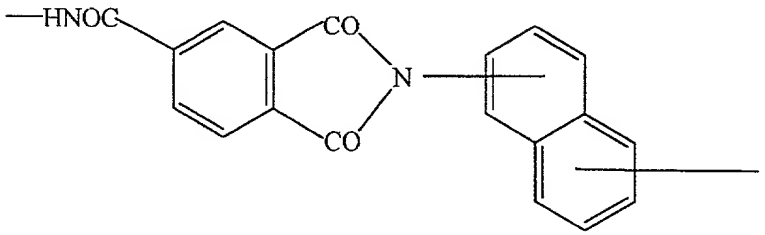
15. The method according to claim 9, wherein the heat-resistant resin is an organic solvent-soluble polyimide and/or polyamide-imide.

16. The method according to claim 9, wherein the heat-resistant resin comprises the unit represented by formula (1)



(1)

wherein R^1 and R^2 are the same or different and each represents hydrogen or an alkyl or alkoxy group having 1 to 4 carbon atoms and/or the unit represented by formula (2)



(2)

17. A flexible metal-clad laminate which is produced by the method according to any one of claims 9 to 16.

18. A flexible printed wiring board which is obtainable from the flexible metal-clad laminate according to any one of claims 1 to 8.